

**NOTICE TO PLANT BREEDERS AND  
GENETICISTS OF THE RELEASE OF 58  
RECOMBINANT INBRED COTTON  
GENETIC LINES**

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**Abstract**

The Agricultural Research Service, United States Department of Agriculture announces the release of 58 F9 inbred genetic lines of Upland cotton. These lines should be valuable sources of genes to enhance traits economically important to the cottonseed and textile industries. The 58 cotton genetic lines were developed at the ARS Coastal Plains Soil, Water, and Plant Research Center, Florence, South Carolina.

The inbred genetic lines originated as 58 randomly selected F2 plants from the cross of PD-3-14/'Simian 2'. The germplasm line PD-3-14 was released by ARS in 1993, while Simian 2 was developed by the Cotton Research Institute, Chinese Academy of Agricultural Sciences, Anyang, Henan Province, Peoples Republic of China. PD-3-14 is a selection from the cultivar PD-3. The pedigree of Simian 2 is not available. The 58 F9 genetic lines have been maintained under forced self-pollination to minimize within line genetic variance, while maximizing among line genetic variance. The 58 lines were derived from 58 F2 plants, resulting in a genetic structure that is amenable for gene tagging by molecular marker analysis and by functional genomic analysis of the population phenotypic extremes.

The F8 and F9 generations of the 58 inbred genetic lines have been evaluated for an array of agronomic and fiber traits. Compared with the parents, PD-3-14 and Simian 2, wide variation exists among the 58 lines for lint yield, lint fraction, boll size, seed index, weight of lint per seed, and the fiber properties strength, length distributions, fineness, short fiber content by weight and number, immature fiber content, and maturity ratio (Tables 1-4). The magnitude of segregation among the 58 lines is such that genes encoding for a trait can be bracketed with molecular markers for purposes of marker assisted breeding. Similarly, functional genomic analysis can be applied to the population phenotypic extremes for purposes of gene discovery.

A limited quantity of seed of the 58 lines is available for distribution to bona fide cotton breeders and geneticists upon written request to O.L. May, USDA-ARS, Pee Dee Research and Education Center, 2200 Pocket Road, Florence, SC 29506-9706 (After Feb. 1 2000, address seed requests to:

University of Georgia, Coastal Plain Expt. Station, P.O. Box 748, Tifton, GA 31793). International requests for seed must be accompanied by the appropriate permits that allow the seed to enter into the requestor's country through customs. Without the necessary permits, the seed request cannot be filled. Genetic material of this release will be deposited in the U.S. National Plant Germplasm System where it will be available for research purposes, including development and commercialization of new cultivars. When this germplasm contributes to the development of a new cultivar, hybrid, or germplasm it is requested that appropriate recognition be given to its source.



